

Publication list of Prof. Luis Santos

Preprints

1. *Simulation of a Rohksar-Kivelson ladder on a NISQ device*, S. Gupta, Y. Javanmard, T. J. Osborne, and L. Santos, arXiv:2401.16326.
2. *Non-Abelian vibron dynamics in trapped-ion arrays*, L. Timm, H. Weimer, and L. Santos, arXiv:2401.16022.
3. *Relaxation in dipolar spin ladders: from pair production to false-vacuum decay* G. A. Dominguez-Castro, T. Bilitewski, D. Wellnitz, A. M. Rey, and L. Santos, arXiv:2311.18091.
4. *Optimal squeezing for high-precision atom interferometers*, P. Feldmann, F. Anders, A. Idel, C. Schubert, D. Schlippert, L. Santos, E. M. Rasel, and C. Klempt, arXiv:2311.10241.
5. *Quantum simulation of dynamical phase transitions in noisy quantum devices*, Y. Javanmard, U. Liaubaite, T. J. Osborne, and L. Santos, arXiv:2211.08318.

Papers in Journals

6. *Ground states of one-dimensional dipolar lattice bosons at unit filling*, M. Lacki, H. Korbmacher, G. A. Dominguez-Castro, J. Zakrzewski, and L. Santos, Phys. Rev. B (accepted, 2024); arXiv:2311.14606.
7. *Non-equilibrium dynamics of dipolar polarons* A. G. Volosniev, G. Bighin, L. Santos, and L. A. Peña Ardila, SciPost Phys. **15**, 232 (2023).; arXiv:2305.17969.

8. *Excited-state phase diagram of a ferromagnetic quantum gas*, B. Meyer-Hoppe, F. Anders, P. Feldmann, L. Santos, and C. Klempt, Phys. Rev. Lett. **131**, 243402 (2023); arXiv:2301.10655.
9. *Tomography of a number-resolving detector by reconstruction of an atomic many-body quantum state*, M. Hetzel, L. Pezzè, C. Pür, M. Quensen, A. Hüper, J. Geng, J. Kruse, L. Santos, W. Ertmer, A. Smerzi, and C. Klempt, Phys. Rev. Lett. (accepted, 2023); arXiv:2207.01270.
10. *Particle dynamics and ergodicity-breaking in twisted-bilayer optical lattices*, G. C. Paul, P. Recher, and L. Santos, Phys. Rev. A (accepted, 2023); arXiv:2306.01588.
11. *Self-bound crystals of antiparallel dipolar mixtures*, M. Arazo, A. Gallemí, M. Guilleumas, R. Mayol, and L. Santos, Phys. Rev. Res. **5**, 043038 (2023); arXiv:2303.02087.
12. *Heat transport in a Coulomb ion crystal with a topological defect*, L. Timm, H. Weimer, L. Santos, and T. E. Mehlstäubler, Phys. Rev. B **108**, 134302 (2023) arXiv:2306.05845.
13. *Impurities in quasi-one-dimensional droplets of binary Bose mixtures*, S. Sinha, S. Biswas, L. Santos, and S. Sinha, Phys. Rev. A **108**, 023311 (2023); arXiv:2304.04261.
14. *Momentum-selective pair creation of spin excitations in dipolar bilayers*, T. Bilitewski, G. A. Domínguez-Castro, D. Wellnitz, A. M. Rey, and L. Santos, Phys. Rev. A **108**, 013313 (2023); arXiv:2302.09059.
15. *Transversal effects on the ground-state of hard-core dipolar bosons in one-dimensional optical lattices*, H. Korbmacher, G. A. Domínguez-Castro, W. Li, J. Zakrzewski, and L. Santos, Phys. Rev. A **107**,

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16. *Role of interaction-induced tunnelling in the dynamics of polar lattice bosons*, A. S. Aramthottil, M. Lacki, L. Santos, and J Zakrzewski, Phys. Rev. B **107**, 104305 (2023); arXiv:2209.11644
17. *Catalyzation of supersolidity in binary dipolar condensates*, D. Scheiermann, L. A. Peña Ardila, T. Bland, R. N. Bisset, and L. Santos, Phys. Rev. A **107**, L021302 (2023); arXiv:2202.08259.
18. *Lattice control of non-ergodicity in a polar lattice gas*, H. Korbmacher, P. Sierant, W. Li, X. Deng, J. Zakrzewski, and L. Santos, Phys. Rev. A **107**, 013301 (2023); arXiv:2207.06186.
19. *Droplet arrays in doubly-dipolar Bose-Einstein condensates*, R. Ghosh, C. Mishra, L. Santos, and R. Nath, Phys. Rev. A **106**, 063318 (2022); arXiv:2210.01093.
20. *Creation and robustness of quantized vortices in a dipolar supersolid when crossing the superfluid-to-supersolid transition*, M. Šindik, A. Recati, S. M. Roccuzzo, L. Santos, S. Stringari, Phys. Rev. A **106**, L061303 (2022); arXiv:2206.14100.
21. *Superfluid properties of a honeycomb dipolar supersolid*, A. Gallemí and L. Santos, Phys. Rev. A **106**, 063301 (2022); arXiv:2209.10450.
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35. *Quantum droplets of dipolar mixtures*, R. N. Bisset, L. A. Peña Ardila, and L. Santos, *Phys. Rev. Lett.* **126**, 025301 (2021); arXiv:2007.00404.
36. *Energy localization in interacting atomic chains with topological solitons*, L. Timm, H. Weimer, L. Santos, and T. E. Mehlstäubler, *Phys. Rev. Research* **2**, 033198 (2020); arXiv:1910.02135.
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